

FIDUCIAL CALIBRATION SYSTEMS AND METHODS FOR MANUFACTURING AND ASSEMBLY

ABSTRACT

Fiducial calibration systems and methods for precisely and accurately manufacturing a part from a workpiece, inspecting or measuring a part, and/or assembling a plurality of manufactured parts including providing a workpiece, wherein the workpiece and the associated processes are subject to environmental and structural variations, and disposing a plurality of datums on a surface of or within the workpiece. The systems and methods also including calibrating the separation distance between each of the plurality of datums to workpiece distance units and disposing the workpiece in a machine, wherein the machine is subject to environmental and structural variations. The systems and methods further including calibrating a coordinate system of the machine to the workpiece distance units, manufacturing the part from the workpiece, inspecting or measuring the part, and/or assembling the plurality of manufactured parts utilizing the calibrated machine, and intermittently recalibrating the machine to the workpiece distance units.

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